

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: GUERIN-MARCHAND, Claudine
DRUILHE, Pierre
- (ii) TITLE OF INVENTION: PEPTIDE SEQUENCES SPECIFIC FOR THE
HEPATIC STAGES OF P. FALCIPARUM BEARING EPITOPES CAPABLE
OF STIMULATING THE T LYMPHOCYTES

(iii) NUMBER OF SEQUENCES: 46

(iv) CORRESPONDENCE ADDRESS:

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(C) CITY: Alexandria
(D) STATE: Virginia
(E) COUNTRY: United States
(F) ZIP: 22313-1404

(v) COMPUTER READABLE FORM:

- (A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30

(vi) CURRENT APPLICATION DATA:

- (A) APPLICATION NUMBER: US 08/098,327
(B) FILING DATE: 24-NOV-1993
(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

- (A) APPLICATION NUMBER: FR 91 01286
(B) FILING DATE: 05-FEB-1991

(viii) ATTORNEY/AGENT INFORMATION:

- (A) NAME: McGowan, Malcolm K.
(B) REGISTRATION NUMBER: 39,300
(C) REFERENCE/DOCKET NUMBER: 010830-045

(ix) TELECOMMUNICATION INFORMATION:

- (A) TELEPHONE: (703) 836-6620
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(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 17 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 8
- (D) OTHER INFORMATION: /note= "Amino Acid 8 wherein Xaa is Glu or Gly."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Leu Ala Lys Glu Lys Leu Gln Xaa Gln Gln Ser Asp Leu Glu Gln Glu
 1 5 10 15

Arg

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /note= "Amino Acid 1 wherein Xaa is Ser or Arg."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /note= "Amino Acid 6 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 8
- (D) OTHER INFORMATION: /note= "Amino Acid 8 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 15
- (D) OTHER INFORMATION: /note= "Amino Acid 15 wherein Xaa is Glu or Gly."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln
 1 5 10 15

Gln

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /note= "Amino Acid 2 wherein Xaa is Ser or Arg."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /note= "Amino Acid 7 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 9
- (D) OTHER INFORMATION: /note= "Amino Acid 9 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 16
- (D) OTHER INFORMATION: /note= "Amino Acid 16 wherein Xaa is Glu or Gly."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa
 1 5 10 15

Gln

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 3

(D) OTHER INFORMATION: /note= "Amino Acid 3 wherein Xaa is Ser or Arg."

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 8

(D) OTHER INFORMATION: /note= "Amino Acid 8 wherein Xaa is Glu or Asp."

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 10

(D) OTHER INFORMATION: /note= "Amino Acid 10 wherein Xaa is Arg or Leu."

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 17

(D) OTHER INFORMATION: /note= "Amino Acid 17 wherein Xaa is Glu or Gly."

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884

(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln
1 5 10 15

Xaa

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1

(D) OTHER INFORMATION: /note= "Amino Acid 1 wherein Xaa is Glu or Gly."

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 4
(D) OTHER INFORMATION: /note= "Amino Acid 4 wherein Xaa is Ser or Arg."

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 9
(D) OTHER INFORMATION: /note= "Amino Acid 9 wherein Xaa is Glu or Asp."

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 11
(D) OTHER INFORMATION: /note= "Amino Acid 11 wherein Xaa is Arg or Leu."

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884
(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu
1 5 10 15

Gln

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 17 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 2
(D) OTHER INFORMATION: /note= "Amino Acid 2 wherein Xaa is Glu or Gly."

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 5
(D) OTHER INFORMATION: /note= "Amino Acid 5 wherein Xaa is Ser or Arg."

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 10
(D) OTHER INFORMATION: /note= "Amino Acid 10 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 12
- (D) OTHER INFORMATION: /note= "Amino Acid 12 wherein Xaa is Arg or Leu."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys
1 5 10 15

Leu

FOOTER SECTION

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /note= "Amino Acid 3 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /note= "Amino Acid 6 wherein Xaa is Ser or Arg."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 11
- (D) OTHER INFORMATION: /note= "Amino Acid 11 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 13
- (D) OTHER INFORMATION: /note= "Amino Acid 13 wherein Xaa is Arg or Leu."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu
 1 5 10 15
 Lys

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 17 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:
 (A) NAME/KEY: Peptide
 (B) LOCATION: 4
 (D) OTHER INFORMATION: /note= "Amino Acid 4 wherein Xaa is Glu or Gly."

(ix) FEATURE:
 (A) NAME/KEY: Peptide
 (B) LOCATION: 7
 (D) OTHER INFORMATION: /note= "Amino Acid 7 wherein Xaa is Ser or Arg."

(ix) FEATURE:
 (A) NAME/KEY: Peptide
 (B) LOCATION: 12
 (D) OTHER INFORMATION: /note= "Amino Acid 12 wherein Xaa is Glu or Asp."

(ix) FEATURE:
 (A) NAME/KEY: Peptide
 (B) LOCATION: 14
 (D) OTHER INFORMATION: /note= "Amino Acid 14 wherein Xaa is Arg or Leu."

(x) PUBLICATION INFORMATION:
 (H) DOCUMENT NUMBER: WO 92/13884
 (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys
 1 5 10 15

Glu

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 17 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 5

(D) OTHER INFORMATION: /note= "Amino Acid 5 wherein Xaa is Glu or Gly."

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 8

(D) OTHER INFORMATION: /note= "Amino Acid 8 wherein Xaa is Ser or Arg."

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 13

(D) OTHER INFORMATION: /note= "Amino Acid 13 wherein Xaa is Glu or Asp."

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 15

(D) OTHER INFORMATION: /note= "Amino Acid 15 wherein Xaa is Arg or Leu."

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884

(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala
1 5 10 15

Lys

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 6

(D) OTHER INFORMATION: /note= "Amino Acid 6 wherein Xaa is Glu or Gly."

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 9
(D) OTHER INFORMATION: /note= "Amino Acid 9 wherein Xaa is Ser or Arg."

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 14
(D) OTHER INFORMATION: /note= "Amino Acid 14 wherein Xaa is Glu or Asp."

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 16
(D) OTHER INFORMATION: /note= "Amino Acid 16 wherein Xaa is Arg or Leu."

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884
(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa
1 5 10 15

Ala

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 7
(D) OTHER INFORMATION: /note= "Amino Acid 7 wherein Xaa is Glu or Gly."

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 10
(D) OTHER INFORMATION: /note= "Amino Acid 10 wherein Xaa is Ser or Arg."

(ix) FEATURE:

(A) NAME/KEY: Peptide
(B) LOCATION: 15
(D) OTHER INFORMATION: /note= "Amino Acid 15 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 17
- (D) OTHER INFORMATION: /note= "Amino Acid 17 wherein Xaa is Arg or Leu."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg
1 5 10 15

Xaa

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /note= "Amino Acid 1 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 8
- (D) OTHER INFORMATION: /note= "Amino Acid 8 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 11
- (D) OTHER INFORMATION: /note= "Amino Acid 11 wherein Xaa is Ser or Arg."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 16
- (D) OTHER INFORMATION: /note= "Amino Acid 16 wherein Xaa is Glu or Asp."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa
 1 5 10 15

Arg

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /note= "Amino Acid 2 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 9
- (D) OTHER INFORMATION: /note= "Amino Acid 9 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 12
- (D) OTHER INFORMATION: /note= "Amino Acid 12 wherein Xaa is Ser or Arg."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 17
- (D) OTHER INFORMATION: /note= "Amino Acid 17 wherein Xaa is Glu or Asp."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln
 1 5 10 15

Xaa

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1

(D) OTHER INFORMATION: /note= "Amino Acid 1 wherein Xaa is Glu or Asp."

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 3

(D) OTHER INFORMATION: /note= "Amino Acid 3 wherein Xaa is Arg or Leu."

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 10

(D) OTHER INFORMATION: /note= "Amino Acid 10 wherein Xaa is Glu or Gly."

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 13

(D) OTHER INFORMATION: /note= "Amino Acid 13 wherein Xaa is Ser or Arg."

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884

(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu
1 5 10 15

Gln

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 2

(D) OTHER INFORMATION: /note= "Amino Acid 2 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Amino Acid 4 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 11
- (D) OTHER INFORMATION: /note= "Amino Acid 11 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 14
- (D) OTHER INFORMATION: /note= "Amino Acid 14 wherein Xaa is Ser or Arg."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu
1 5 10 15

Glu

(2) INFORMATION FOR SEQ ID NO:16:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 18 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /note= "Amino Acid 3 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 5
- (D) OTHER INFORMATION: /note= "Amino Acid 5 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 12
- (D) OTHER INFORMATION: /note= "Amino Acid 12 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 15
- (D) OTHER INFORMATION: /note= "Amino Acid 15 wherein Xaa is Ser or Arg."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp
1 5 10 15

Leu

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Amino Acid 4 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /note= "Amino Acid 6 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 13
- (D) OTHER INFORMATION: /note= "Amino Acid 13 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 16
- (D) OTHER INFORMATION: /note= "Amino Acid 16 wherein Xaa is Ser or Arg."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa
 1 5 10 15

Asp

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 5
- (D) OTHER INFORMATION: /note= "Amino Acid 5 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /note= "Amino Acid 7 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 14
- (D) OTHER INFORMATION: /note= "Amino Acid 14 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 17
- (D) OTHER INFORMATION: /note= "Amino Acid 17 wherein Xaa is Ser or Arg."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln
 1 5 10 15

Xaa

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 107 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884

(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Arg Lys Ala Asp Thr Lys Lys Asn Leu Glu Arg Lys Lys Glu His Gly
1 5 10 15

Asp Ile Leu Ala Glu Asp Leu Tyr Gly Arg Leu Glu Ile Pro Ala Ile
20 25 30

Glu Leu Pro Ser Glu Asn Glu Arg Gly Tyr Tyr Ile Pro His Gln Ser
35 40 45

Ser Leu Pro Gln Asp Asn Arg Gly Asn Ser Arg Asp Ser Lys Glu Ile
50 55 60

Ser Ile Ile Glu Lys Thr Asn Arg Glu Ser Ile Thr Thr Asn Val Glu
65 70 75 80

Gly Arg Arg Asp Ile His Lys Gly His Leu Glu Glu Lys Lys Asp Gly
85 90 95

Ser Ile Lys Pro Glu Gln Lys Glu Asp Lys Ser
100 105

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 117 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884

(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Leu Gln Glu Gln Gln Arg Asp Leu Glu Gln Arg Lys Ala Asp Thr Lys
1 5 10 15

Lys Asn Leu Glu Arg Lys Lys Glu His Gly Asp Ile Leu Ala Glu Asp
20 25 30

Leu Tyr Gly Arg Leu Glu Ile Pro Ala Ile Glu Leu Pro Ser Glu Asn
35 40 45

Glu Arg Gly Tyr Tyr Ile Pro His Gln Ser Ser Leu Pro Gln Asp Asn
 50 55 60

Arg Gly Asn Ser Arg Asp Ser Lys Glu Ile Ser Ile Ile Glu Lys Thr
 65 70 75 80

Asn Arg Glu Ser Ile Thr Thr Asn Val Glu Gly Arg Arg Asp Ile His
 85 90 95

Lys Gly His Leu Glu Glu Lys Lys Asp Gly Ser Ile Lys Pro Glu Gln
 100 105 110

Lys Glu Asp Lys Ser
 115

(2) INFORMATION FOR SEQ ID NO:21:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Asp Thr Lys Lys Asn Leu Glu Arg Lys Lys Glu His Gly Asp Ile Leu
 1 5 10 15

Ala Glu Asp Leu Tyr Gly Arg Leu Glu Ile Pro
 20 25

(2) INFORMATION FOR SEQ ID NO:22:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 24 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Arg Asp Leu Glu
 1 5 10 15

Gln Arg Lys Ala Asp Thr Lys Lys
20

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Asn	Ser	Arg	Asp	Ser	Lys	Glu	Ile	Ser	Ile	Ile	Glu	Lys	Thr	Asn	Arg
1														15	
					5							10			

Glu	Ser	Ile	Thr	Thr	Asn	Val	Glu	Gly	Arg	Arg	Asp	Ile	His	Lys
					20				25				30	

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 151 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Arg	Asp	Glu	Leu	Phe	Asn	Glu	Leu	Leu	Asn	Ser	Val	Asp	Val	Asn	Gly
1														15	
						5						10			

Glu	Val	Lys	Glu	Asn	Ile	Leu	Glu	Glu	Ser	Gln	Val	Asn	Asp	Asp	Ile
					20				25			30			

Phe	Asn	Ser	Leu	Val	Lys	Ser	Val	Gln	Gln	Glu	Gln	Gln	His	Asn	Val
					35			40				45			

Glu	Glu	Lys	Val	Glu	Glu	Ser	Val	Glu	Glu	Asn	Asp	Glu	Glu	Ser	Val
					50			55			60				

Glu	Glu	Asn	Val	Glu	Glu	Asn	Val	Glu	Glu	Asn	Asp	Asp	Gly	Ser	Val
					65			70			75		80		

Ala Ser Ser Val Glu Glu Ser Ile Ala Ser Ser Val Asp Glu Ser Ile
 85 90 95

Asp Ser Ser Ile Glu Glu Asn Val Ala Pro Thr Val Glu Glu Ile Val
 100 105 110

Ala Pro Thr Val Glu Glu Ile Val Ala Pro Ser Val Val Glu Lys Cys
 115 120 125

Ala Pro Ser Val Glu Glu Ser Val Ala Pro Ser Val Glu Glu Ser Val
 130 135 140

Ala Glu Met Leu Lys Glu Arg
 145 150

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 47 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:
- Arg Asp Glu Leu Phe Asn Glu Leu Leu Asn Ser Val Asp Val Asn Gly
 1 5 10 15
- Glu Val Lys Glu Asn Ile Leu Glu Glu Ser Gln Val Asn Asp Asp Ile
 20 25 30
- Phe Asn Ser Leu Val Lys Ser Val Gln Gln Glu Gln His Asn
 35 40 45

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 26 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Asp Glu Leu Phe Asn Glu Leu Leu Asn Ser Val Asp Val Asn Gly Glu
 1 5 10 15

Val Lys Glu Asn Ile Leu Glu Glu Ser Gln
 20 25

(2) INFORMATION FOR SEQ ID NO:27:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide

- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Leu Glu Glu Ser Gln Val Asn Asp Asp Ile Phe Ser Asn Ser Leu Val
 1 5 10 15

Lys Ser Val Gln Gln Glu Gln Gln His Asn Val
 20 25

(2) INFORMATION FOR SEQ ID NO:28:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide

- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Val Glu Lys Cys Ala Pro Ser Val Glu Glu Ser Val Ala Pro Ser Val
 1 5 10 15

Glu Glu Ser Val Ala Glu Met Leu Lys Glu Arg
 20 25

(2) INFORMATION FOR SEQ ID NO:29:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884

(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

TTGTTCTAGA TCGCTTT

17

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884

(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

AAAGAAGATA AATCT

15

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 316 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884

(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln
 1 5 10 15

Gln Ser Asp Leu Glu Gln Asp Arg Leu Ala Lys Glu Lys Leu Gln Glu
 20 25 30

Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln
 35 40 45

Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu
 50 55 60

Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys
 65 70 75 80

Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Asp Arg Leu Ala Lys Glu
 85 90 95

Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys
 100 105 110

Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala
 115 120 125

Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg
 130 135 140

Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg
 145 150 155 160

Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu
 165 170 175

Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln
 180 185 190

Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Arg Asp Leu Glu
 195 200 205

Gln Arg Lys Ala Asp Thr Lys Lys Asn Leu Glu Arg Lys Lys Glu His
 210 215 220

Gly Asp Ile Leu Ala Glu Asp Leu Tyr Gly Arg Leu Glu Ile Pro Ala
 225 230 235 240

Ile Glu Leu Pro Ser Glu Asn Glu Arg Gly Tyr Tyr Ile Pro His Gln
 245 250 255

Ser Ser Leu Pro Gln Asp Asn Arg Gly Asn Ser Arg Asp Ser Lys Glu
 260 265 270

Ile Ser Ile Ile Glu Lys Thr Asn Arg Glu Ser Ile Thr Thr Asn Val
 275 280 285

Glu Gly Arg Arg Asp Ile His Lys Gly His Leu Glu Glu Lys Lys Asp
 290 295 300

Gly Ser Ile Lys Pro Glu Gln Lys Glu Asp Lys Ser
 305 310 315

(2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 950 base pairs
 - (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

AAAGCGATCT AGAACAAAGAG AGACGTGCTA AAGAAAAGTT GCAAGAACAA CAAAGCGATT	60
TAGAACAAAGA TAGACTTGCT AAAGAAAAGT TACAAGAGCA GCAAAGCGAT TTAGAACAAAG	120
AGAGACTTGC TAAAGAAAAG TTGCAAGAAC AACAAAGCGA TCTAGAACAA GAGAGACGTG	180
CTAAAGAAAA GTTGCAAGAA CAACAAAGCG ATTAGAACAGA AGAGAGACGT GCTAAAGAAA	240
AGTTGCAAGA ACAACAAAGC GATTTAGAAC AAGATAGACT TGCTAAAGAA AAGTTACAAG	300
AGCAGCAAAG CGATTTAGAA CAAGAGAGAC GTGCTAAAGA AAAGTTGCAA GAACAAACAA	360
GCGATTAGA ACAAGAGAGA CGTGCTAAAG AAAAGTTGCA AGAACAAACAA AGCGATTTAG	420
AACAAGAGAG ACTTGCTAAA GAAAAGTTGC AAGAACAAACA AAGCGATTTA GAACAAGAGA	480
GACGTGCTAA AGAAAAGTTG CAAGAACAAAC AAAGCGATTT AGAACAAAGAG AGACGTGCTA	540
ATAGAAAAGTT GCAAGAACAA CAAAGCGATT TAGAACAAAGA GAGACGTGCT AAAGAAAAGT	600
TGCAAGAGCA GCAAAGAGAT TTAGAACAAA GGAAGGCTGA TACGAAAAAA AATTTAGAAA	660
GAAAAAAAGGA ACATGGAGAT ATATTAGCAG AGGATTTATA TGGTCGTTA GAAATACCAG	720
CTATAGAACT TCCATCAGAA AATGAACGTG GATATTATAT ACCACATCAA TCTTCTTTAC	780
CTCAGGACAA CAGAGGAAAT AGTAGAGATT CCAAGGAAAT ATCTATAATA GAAAAAAACAA	840
ATAGAGAACATC TATTACAACA AATGTTGAAG GACGAAGGGA TATACATAAA CGACATCTTG	900
AAGAAAAGAA AGATGGTTCA ATAAAACCAAG AACAAAAAGA AGATAAAATCT	950

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 464 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

GAATTCCGTG ATGAACTTT TAATGAATTA TTAAATAGTG TAGATGTTAA TGGAGAAGTA	60
AAAGAAAATA TTTTGGAGGA AAGTCAGTT AATGACGATA TTTTAATAG TTTAGTAAAA	120
AGTGTCAAC AAGAACACA ACACAATGTT GAAGAAAAG TTGAAGAAAG TGTAGAAGAA	180
AATGACGAAG AAAGTGTAGA AGAAAATGTA GAAGAAAATG TAGAAGAAAA TGACGACGGA	240
AGTGTAGCCT CAAGTGTGA AGAAAGTATA GCTCAAGTG TTGATGAAAG TATAGATTCA	300
AGTATTGAAG AAAATGTAGC TCCAAGTGT GAAGAAATCG TAGCTCCAAC TGTTGAAGAA	360
ATTGTAGCTC CAAGTGTGT AGAAAAGTGT GCTCCAAGTG TTGAAGAAAG TGTAGCTCCA	420
AGTGTGAAG AAAGTGTAGC TGAAATGTTG AAGGAAAGGA ATT	464

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 988 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

AAAGTATAACA TCTTCCTTCT TTACTTCTTA AAATGAAACA TATTTGTAC ATATCATTAA	60
ACTTTATCCT TGTAAATTAA TTGATATTTC ATATAAATGG AAAGATAATA AAGAATTCTG	120
AAAAAGATGA AATCATAAAAA TCTAACTTGA GAAGTGGTTC TTCAAATTCT AGGAATCGAA	180
TAAATGAGGA AAATCACGAG AAGAACACG TTTTATCTCA TAATTCAATAT GAGAAAACAA	240
AAAATAATGA AAATAATAAA TTTTCGATA AGGATAAAGA GTTAACGATG TCTAATGTAA	300
AAAATGTGTC ACAAAACAAAT TTCAAAAGTC TTTTAAGAAA TCTTGGTGTG TCAGAGAATA	360
TATTCTTAA AGAAAATAAA TTAAATAAGG AAGGGAAATT AATTGAACAC ATAATAAAATG	420
ATGATGACGA TAAAAAAAAA TATATTAAAG GGCAAGACGA AACAGACAA GAAGATCTG	480
AAGAAAAAGC AGCTAAAGAA AAGTTACAGG GGCAACAAAG CGATTCAAGA CAAGAGAGAC	540
GTGCTAAAGA AAAGTTGCAA GAACACACAA GCGATTTAGA ACAAGAGAGA CTTGCTAAAG	600
AAAAGTTGCA AGAACACAA AGCGATTTAG AACAAAGAGAG ACGTGCTAAA GAAAAGTTGC	660

AAGAACACA AAGCGATT A GAAACAAGAGA GACTTGCTAA AGAAAAGTTG CAAGAACAC	720
AAAGCGATT T AGAACAAAGAG AGACGTGCTA AAGAAAAGTT GCAAGAACAA CAAAGCGATT	780
TAGAACAAAGA GAGACGTGCT AAAGAAAAGT TGCAAGAAC ACAAAGCGAT TTAGAACAAAG	840
AGAGACTTGC TAAAGAAAAG TTACAAGAGC AGCAAAGCGA TTTAGAACAA GATAGACTTG	900
CTAAAGAAAA GTTGCAAGAA CAACAAAGCG ATTTAGAAC AAGAGAGACGT GCTAAAGAAA	960
GGTTGCAAGA ACAACAAAGC GATTTAGA	988

(2) INFORMATION FOR SEQ ID NO:35:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 12 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

- (x) PUBLICATION INFORMATION:
- (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

ATGAAACATA TT

12

(2) INFORMATION FOR SEQ ID NO:36:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 12 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

- (x) PUBLICATION INFORMATION:
- (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

AAGCGATT A GA

12

(2) INFORMATION FOR SEQ ID NO:37:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 954 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: 1..954

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884

(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

GAA CAA CAA AGC GAT TTA GAA CAA GAG AGA CTT GCT AAA GAA AAG TTG Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Leu Ala Lys Glu Lys Leu 180 185 190	576
CAA GAA CAA CAA AGC GAT TTA GAA CAA GAG AGA CGT GCT AAA GAA AAG Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys 195 200 205	624
TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA GAG AGA CTT GCT AAA GAA Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Leu Ala Lys Glu 210 215 220	672
AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA GAG AGA CGT GCT AAA Lys Leu Gln Glu Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys 225 230 235 240	720
GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA GAG AGA CGT GCT Glu Lys Leu Gln Glu Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala 245 250 255	768
AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA GAG AGA CTT LYS Glu Lys Leu Gln Glu Gln Ser Asp Leu Glu Gln Glu Arg Leu 260 265 270	816
GCT AAA GAA AAG TTA CAA GAG CAG CAA AGC GAT TTA GAA CAA GAT AGA Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Asp Arg 275 280 285	864
CTT GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA GAG Leu Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu 290 295 300	912
AGA CGT GCT AAA GAA AGG TTG CAA GAA CAA CAA AGC GAT TTA Arg Arg Ala Lys Glu Arg Leu Gln Glu Gln Gln Ser Asp Leu 305 310 315	954

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1493 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

CAAGAACAAAC AAAGCGATCT AGAACAAAGAG AGACGTGCTA AAGAAAAGTT GCAAGAACAA CAAAGCGATT TAGAACAAAGA TAGACTTGCT AAAGAAAAGT TACAAGAGCA GCAAAGCGAT	60
	120

TTAGAACAAAG AGAGACTTGC TAAGAAAAGT TGCAAGAAC ACAAAGCGAT CTAGAACAAAG	180
AGAGACGTGC TAAAGAAAAG TTGCAAGAAC AACAAAGCGA TTTAGAACAA GAGAGACGTG	240
CTAAAGAAAA GTTGCAGAAC CAACAAAGCG ATTGAGAAC AGATAGACTT GCTAAAGAAA	300
AGTTACAAGA GCAGCAAAGC GATTAGAAC AAGAGAGACG TGCTAAAGAA AAGTTGCAAG	360
AACAACAAAG CGATTTAGAA CAAGAGAGAC GTGCTAAGAA AAGTTGCAAG AACAACAAAG	420
CGATTTAGAA CAAGAGAGAC TTGCTAAAGA AAAGTTGCAA GAACAACAAA GCGATTTAGA	480
ACAAGAGAGA CGTGCTAAAG AAAAGTTGCA AGAACAAACAA AGCGATTTAG ACAAGAGAG	540
ACGTGCTAAG AAAAGTTGCA AGAACAAACAA AGCGATTTAG ACAAGAGAG ACGTGCTAAA	600
GAAAAGTTGC AAGAGCAGCA AAGAGATTAA GAACAAAGGA AGGCTGATAC GAAAAAAAAT	660
TTAGAAAGAA AAAAGGAACA TGGAGATATA TTAGCAGAGG ATTATATATGG TCGTTTAGAA	720
ATACCAGCTA TAGAACTTCC ATCAGAAAAT GAACGTGGAT ATTATATACC ACATCAATCT	780
TGTTTACCTC AGGACAACAG AGGAAATAGT AGAGATTCCA AGGAAATATC TATAATAGAA	840
AAAACAAATA GAGAATCTAT TACAACAAAT GTTGAAGGAC GAAGGGATAT ACATAAAGGA	900
CATCTTGAAG AAAAGAAAGA TGGTTCAATA AAACCCAGAAC AAAAAGAAGA TAAATCTGCT	960
GACATACAAA ATCATACATT AGAGACAGTA AATATTTCTG ATGTTAATGA TTTTCAAATA	1020
AGTAAGTATG AGGATGAAAT AAGTGCTGAA TATGACGATT CATTAAATAGA TGAAGAAGAA	1080
GATGATGAAG ACTTAGACGA ATTTAAGCCT ATTGTGCAAT ATGACAATT CCAAGATGAA	1140
GAAAACATAG GAATTTATAA AGAACTAGAA GATTTGATAG AGAAAAATGA AAATTTAGAT	1200
GATTTAGATG AAGGAATAGA AAAATCATCA GAAGAATTAT CTGAAGAAAA AATAAAAAAAA	1260
GGAAAGAAAT ATGAAAAAAC AAAGGATAAT AATTTAAAC CAAATGATAA AAGTTGTAT	1320
GATGAGCATA TTAAAAAATA TAAAAATGAT AAGCAGGTTA ATAAGGAAAA GGAAAATTC	1380
ATAAAATCAT TGTTTCATAT ATTTGACGGA GACAATGAAA TTTTACAGAT CGTGGATGAG	1440
TTATCTGAAG ATATAACTAA ATATTTATG AAACATATAA AGGTTATATA TTT	1493

(2) INFORMATION FOR SEQ ID NO:39:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 12 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: DNA (genomic)

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884
(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

CAAGAACAAAC AA

12

(2) INFORMATION FOR SEO ID NO:40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/13884
(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

GGTTATATAT TT

12

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1482 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:
 (A) NAME/KEY: CDS
 (B) LOCATION: 1-1482

(x) PUBLICATION INFORMATION:
(H) DOCUMENT NUMBER: WO 92/13884
(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

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CAA GAA CAA CAA AGC GAT CTA GAA CAA GAG AGA CGT GCT AAA GAA AAG
Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Arg Ala Lys Glu Lys
   1           5           10          15

```

48

TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA GAT AGA CTT GCT AAA GAA
 Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Asp Arg Leu Ala Lys Glu
 20 25 30

06

AAG TTA CAA GAG CAG CAA AGC GAT TTA GAA CAA GAG AGA CTT GCT AAA
Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Leu Ala Lys

144

35

40

45

GAA AAG TTG CAA GAA CAA CAA AGC GAT CTA GAA CAA GAG AGA CGT GCT Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala 50 55 60		192
AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA GAG AGA CGT Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg 65 70 75 80		240
GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA GAT AGA Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Asp Arg 85 90 95		288
CTT GCT AAA GAA AAG TTA CAA GAG CAG CAA AGC GAT TTA GAA CAA GAG Leu Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu 100 105 110		336
Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln 115 120 125		384
GAG AGA CGT GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu 130 135 140		432
CAA GAG AGA CTT GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA Gln Glu Arg Leu Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu 145 150 155 160		480
GAA CAA GAG AGA CGT GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp 165 170 175		528
TTA GAA CAA GAG AGA CGT GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser 180 185 190		576
GAT TTA GAA CAA GAG AGA CGT GCT AAA GAA AAG TTG CAA GAG CAG CAA Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln 195 200 205		624
AGA GAT TTA GAA CAA AGG AAG GCT GAT ACG AAA AAA AAT TTA GAA AGA Arg Asp Leu Glu Gln Arg Lys Ala Asp Thr Lys Lys Asn Leu Glu Arg 210 215 220		672
AAA AAG GAA CAT GGA GAT ATA TTA GCA GAG GAT TTA TAT GGT CGT TTA Lys Lys Glu His Gly Asp Ile Leu Ala Glu Asp Leu Tyr Gly Arg Leu 225 230 235 240		720
GAA ATA CCA GCT ATA GAA CTT CCA TCA GAA AAT GAA CGT GGA TAT TAT Glu Ile Pro Ala Ile Glu Leu Pro Ser Glu Asn Glu Arg Gly Tyr Tyr 245 250 255		768
ATA CCA CAT CAA TCT TCT TTA CCT CAG GAC AAC AGA GGG AAT AGT AGA Ile Pro His Gln Ser Ser Leu Pro Gln Asp Asn Arg Gly Asn Ser Arg		816

260

265

270

GAT TCC AAG GAA ATA TCT ATA ATA GAA AAA ACA AAT AGA GAA TCT ATT Asp Ser Lys Glu Ile Ser Ile Ile Glu Lys Thr Asn Arg Glu Ser Ile 275	280	285	864
ACA ACA AAT GTT GAA GGA CGA AGG GAT ATA CAT AAA GGA CAT CTT GAA Thr Thr Asn Val Glu Gly Arg Arg Asp Ile His Lys Gly His Leu Glu 290	295	300	912
GAA AAG AAA GAT GGT TCA ATA AAA CCA GAA CAA AAA GAA GAT AAA TCT Glu Lys Lys Asp Gly Ser Ile Lys Pro Glu Gln Lys Glu Asp Lys Ser 305	310	315	960
GCT GAC ATA CAA AAT CAT ACA TTA GAG ACA GTA AAT ATT TCT GAT GTT Ala Asp Ile Gln Asn His Thr Leu Glu Thr Val Asn Ile Ser Asp Val 325	330	335	1008
AAT GAT TTT CAA ATA AGT AAG TAT GAG GAT GAA ATA AGT GCT GAA TAT Asn Asp Phe Gln Ile Ser Lys Tyr Glu Asp Glu Ile Ser Ala Glu Tyr 340	345	350	1056
GAC GAT TCA TTA ATA GAT GAA GAA GAA GAT GAT GAA GAC TTA GAC GAA Asp Asp Ser Leu Ile Asp Glu Glu Glu Asp Asp Glu Asp Leu Asp Glu 355	360	365	1104
TTT AAG CCT ATT GTG CAA TAT GAC AAT TTC CAA GAT GAA GAA AAC ATA Phe Lys Pro Ile Val Gln Tyr Asp Asn Phe Gln Asp Glu Glu Asn Ile 370	375	380	1152
GGA ATT TAT AAA GAA CTA GAA GAT TTG ATA GAG AAA AAT GAA AAT TTA Gly Ile Tyr Lys Glu Leu Glu Asp Leu Ile Glu Lys Asn Glu Asn Leu 385	390	395	1200
GAT GAT TTA GAT GAA GGA ATA GAA AAA TCA TCA GAA GAA TTA TCT GAA Asp Asp Leu Asp Glu Gly Ile Glu Lys Ser Ser Glu Glu Leu Ser Glu 405	410	415	1248
GAA AAA ATA AAA AAA GGA AAG AAA TAT GAA AAA ACA AAG GAT AAT AAT Glu Lys Ile Lys Lys Gly Lys Tyr Glu Lys Thr Lys Asp Asn Asn 420	425	430	1296
TTT AAA CCA AAT GAT AAA AGT TTG TAT GAT GAG CAT ATT AAA AAA TAT Phe Lys Pro Asn Asp Lys Ser Leu Tyr Asp Glu His Ile Lys Lys Tyr 435	440	445	1344
AAA AAT GAT AAG CAG GTT AAT AAG GAA AAG GAA AAA TTC ATA AAA TCA Lys Asn Asp Lys Gln Val Asn Lys Glu Lys Glu Lys Phe Ile Lys Ser 450	455	460	1392
TTG TTT CAT ATA TTT GAC GGA GAC AAT GAA ATT TTA CAG ATC GTG GAT Leu Phe His Ile Phe Asp Gly Asp Asn Glu Ile Leu Gln Ile Val Asp 465	470	475	1440
GAG TTA TCT GAA GAT ATA ACT AAA TAT TTT ATG AAA CTA TAA Glu Leu Ser Glu Asp Ile Thr Lys Tyr Phe Met Lys Leu			1482

(2) INFORMATION FOR SEQ ID NO:42:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 12 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

- (ix) FEATURE:
(A) NAME/KEY: CDS
(B) LOCATION: 1..12

- (x) PUBLICATION INFORMATION:
(H) DOCUMENT NUMBER: WO 92/13884
(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

AAG GTT ATA TAT
Lys Val Ile Tyr

12

(2) INFORMATION FOR SEQ ID NO:43:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 12 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

- (x) PUBLICATION INFORMATION:
(H) DOCUMENT NUMBER: WO 92/13884
(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

CAAGAACAAAC AA

12

(2) INFORMATION FOR SEQ ID NO:44:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 12 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

- (x) PUBLICATION INFORMATION:
(H) DOCUMENT NUMBER: WO 92/13884

(J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

ATGAAACTAT AA

12

(2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1482 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..1482

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

CAA GAA CAA CAA AGC GAT CTA GAA CAA GAG AGA CGT GCT AAA GAA AAG Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys 1 5 10 15	48
TTC CAA GAA CAA CAA AGC GAT TTA GAA CAA GAT AGA CTT GCT AAA GAA Leu Gln Gln Gln Ser Asp Leu Glu Gln Asp Arg Leu Ala Lys Glu 20 25 30	96
AAG TTA CAA GAG CAG CAA AGC GAT TTA GAA CAA GAG AGA CTT GCT AAA Lys Leu Gln Glu Gln Ser Asp Leu Glu Gln Glu Arg Leu Ala Lys 35 40 45	144
GAA AAG TTG CAA GAA CAA CAA AGC GAT CTA GAA CAA GAG AGA CGT GCT Glu Lys Leu Gln Glu Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala 50 55 60	192
AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA GAG AGA CGT Lys Glu Lys Leu Gln Glu Gln Ser Asp Leu Glu Gln Glu Arg Arg 65 70 75 80	240
GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA GAT AGA Ala Lys Glu Lys Leu Gln Glu Gln Ser Asp Leu Glu Gln Asp Arg 85 90 95	288
CTT GCT AAA GAA AAG TTA CAA GAG CAG CAA AGC GAT TTA GAA CAA GAG Leu Ala Lys Glu Lys Leu Gln Glu Gln Ser Asp Leu Glu Gln Glu 100 105 110	336
AGA CGT GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA CAA Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Ser Asp Leu Glu Gln	384

115

120

125

GAG AGA CGT GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA GAA Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu 130	135	140	432
CAA GAG AGA CTT GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT TTA Gln Glu Arg Leu Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu 145	150	155	480
GAA CAA GAG AGA CGT GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC GAT Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp 165	170	175	528
TTA GAA CAA GAG AGA CGT GCT AAA GAA AAG TTG CAA GAA CAA CAA AGC Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser 180	185	190	576
GAT TTA GAA CAA GAG AGA CGT GCT AAA GAA AAG TTG CAA GAG CAG CAA Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln 195	200	205	624
AGA GAT TTA GAA CAA AGG AAG GCT GAT ACG AAA AAA AAT TTA GAA AGA Arg Asp Leu Glu Gln Arg Lys Ala Asp Thr Lys Lys Asn Leu Glu Arg 210	215	220	672
AAA AAG GAA CAT GGA GAT ATA TTA GCA GAG GAT TTA TAT GGT CGT TTA Lys Lys Glu His Gly Asp Ile Leu Ala Glu Asp Leu Tyr Gly Arg Leu 225	230	235	720
GAA ATA CCA GCT ATA GAA CTT CCA TCA GAA AAT GAA CGT GGA TAT TAT Glu Ile Pro Ala Ile Glu Leu Pro Ser Glu Asn Glu Arg Gly Tyr Tyr 245	250	255	768
ATA CCA CAT CAA TCT TCT TTA CCT CAG GAC AAC AGA GGG AAT AGT AGA Ile Pro His Gln Ser Ser Leu Pro Gln Asp Asn Arg Gly Asn Ser Arg 260	265	270	816
GAT TCC AAG GAA ATG TCT ATA ATA GAA AAA ACA AAT AGA GAA TCT ATT Asp Ser Lys Glu Met Ser Ile Ile Glu Lys Thr Asn Arg Glu Ser Ile 275	280	285	864
ACA ACA AAT GTT GAA GGA CGA AGG GAT ATA CAT AAA GGA CAT CTT GAA Thr Thr Asn Val Glu Gly Arg Arg Asp Ile His Lys Gly His Leu Glu 290	295	300	912
GAA AAG AAA GAT GGT TCA ATA AAA CCA GAA CAA AAA GAA GAT AAA TCT Glu Lys Lys Asp Gly Ser Ile Lys Pro Glu Gln Lys Glu Asp Lys Ser 305	310	315	960
GCT GAC ATA CAA AAT CAT ACA TTA GAG ACA GTA AAT ATT TCT GAT GTT Ala Asp Ile Gln Asn His Thr Leu Glu Thr Val Asn Ile Ser Asp Val 325	330	335	1008
AAT GAT TTT CAA ATA AGT AAG TAT GAG GAT GAA ATA AGT GCT GAA TAT Asn Asp Phe Gln Ile Ser Lys Tyr Glu Asp Glu Ile Ser Ala Glu Tyr			1056

340

345

350

GAC GAT TCA TTA ATA GAT GAA GAA GAA GAT GAT GAA GAC TTA GAC GAA Asp Asp Ser Leu Ile Asp Glu Glu Glu Asp Asp Glu Asp Leu Asp Glu 355	360	365	1104
TTT AAG CCT ATT GTG CAA TAT GAC AAT TTC CAA GAT GAA GAA AAC ATA Phe Lys Pro Ile Val Gln Tyr Asp Asn Phe Gln Asp Glu Glu Asn Ile 370	375	380	1152
GGA ATT TAT AAA GAA CTA GAA GAT TTG ATA GAG AAA AAT GAA AAT TTA Gly Ile Tyr Lys Glu Leu Glu Asp Leu Ile Glu Lys Asn Glu Asn Leu 385	390	395	1200
GAT GAT TTA GAT GAA GGA ATA GAA AAA TCA TCA GAA GAA TTA TCT GAA Asp Asp Leu Asp Glu Gly Ile Glu Lys Ser Ser Glu Glu Leu Ser Glu 405	410	415	1248
GAA AAA ATA AAA AAA GGA AAG AAA TAT GAA AAA ACA AAG GAT AAT AAT Glu Lys Ile Lys Lys Gly Lys Lys Tyr Glu Lys Thr Lys Asp Asn Asn 420	425	430	1296
TTT AAA CCA AAT GAT AAA AGT TTG TAT GAT GAG CAT ATT AAA AAA TAT Phe Lys Pro Asn Asp Lys Ser Leu Tyr Asp Glu His Ile Lys Lys Tyr 435	440	445	1344
AAA AAT GAT AAG CAG GTT AAT AAG GAA AAG GAA AAA TTC ATA AAA TCA Lys Asn Asp Lys Gln Val Asn Lys Glu Lys Glu Lys Phe Ile Lys Ser 450	455	460	1392
TG TTT CAT ATA TTT GAC GGA GAC AAT GAA ATT TTA CAG ATC GTG GAT Ile Phe His Ile Phe Asp Gly Asp Asn Glu Ile Leu Gln Ile Val Asp 465	470	475	1440
GAG TTA TCT GAA GAT ATA ACT AAA TAT TTT ATG AAA CTA TAA Glu Leu Ser Glu Asp Ile Thr Lys Tyr Phe Met Lys Leu 485	490		1482

(2) INFORMATION FOR SEQ ID NO:46:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 12 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: DNA (genomic)

- (ix) FEATURE:
 - (A) NAME/KEY: CDS
 - (B) LOCATION: 1..12

- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

AAG GTT ATA TAT
Lys Val Ile Tyr
1